

LEY DE GASES.

11.-)

$$\left. \begin{array}{l} V_1 = 5 \text{ l} \\ P_1 = 1'2 \text{ atm} \\ T = \text{cte} \\ V_2 = 1 \text{ l} \\ P_2 = ? \end{array} \right\}$$

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2}$$

$$1'2 \cdot 5 = P_2 \cdot 1$$

$$\boxed{P_2 = 6 \text{ atm}}$$

13.-)

$$\begin{array}{l} V_1 = 268 \text{ ml} = 0'268 \text{ l} \\ T_1 = 18^\circ \text{C} = 291 \text{ K} \\ P_1 = 1'5 \text{ atm} \end{array}$$

$$\begin{array}{l} P_2 = ? \\ V_2 = 500 \text{ ml} = 0'5 \text{ l} \\ T_2 = 25^\circ \text{C} = 298 \text{ K} \end{array}$$

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2}$$

$$\frac{1'5 \cdot 0'268}{291} = \frac{0'5 \cdot P_2}{298} \Rightarrow \frac{0'402}{291} = \frac{0'5 \cdot P_2}{298}$$

$$119'796 = 145'5 \cdot P_2$$

$$\boxed{P_2 = \frac{119'796}{145'5} = 0'823 \text{ atm}}$$

14.-)

$$\begin{array}{l} V_1 = 5 \text{ l} \\ T_1 = 20^\circ \text{C} = 293 \text{ K} \\ P_1 = 0'5 \text{ atm} \end{array} \quad \begin{array}{l} T_2 = ? \\ V_2 = 3 \text{ l} \\ P_2 = 2 \text{ atm} \end{array}$$

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2}$$

$$\frac{0'5 \cdot 5}{293} = \frac{3 \cdot 2}{T_2}$$

$$\frac{2'5}{293} = \frac{6}{T_2}$$

$$\boxed{T_2 = 703'2 \text{ K}}$$

15.)

$$V_1 = 300 \text{ mL} = 0.3 \text{ l}$$

$$T_1 = 27^\circ\text{C} = 300 \text{ K}$$

$$P_1 = 1 \text{ atm}$$

$$V_2 = ?$$

$$\text{C.N.} \left\{ \begin{array}{l} T_2 = 273 \text{ K} \\ P_2 = 1 \text{ atm} \end{array} \right.$$

PRESIÓN = CTE

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2}$$

$$\frac{0.3}{300} = \frac{V_2}{273}$$

$$81.9 = 300 \cdot V_2$$

$$V_2 = 0.273 \text{ l}$$

16.)

$$V_1 = 2500 \text{ l}$$

$$P_1 = 941 \text{ mmHg} = 1.238 \text{ atm}$$

$$V_2 = ?$$

$$P_2 = 790 \text{ mmHg} = 1.039 \text{ atm}$$

TEMPERATURA = CTE

$$P_1 \cdot V_1 = P_2 \cdot V_2$$

$$1.238 \cdot 2500 = 1.039 \cdot V_2$$

$$3095 = 1.039 V_2$$

$$V_2 = 2978.826 \text{ l}$$

17.)

$$\text{C.N.} \left\{ \begin{array}{l} P_1 = 1 \text{ atm} \\ T_1 = 273 \text{ K} \end{array} \right.$$

$$V_1 = 4 \text{ l}$$

$$T_2 = 100^\circ\text{C} = 373 \text{ K}$$

$$P_2 = 1.5 \text{ atm}$$

$$V_2 = ?$$

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2}$$

$$\frac{1 \cdot 4}{273} = \frac{1.5 \cdot V_2}{373}$$

\Rightarrow

$$\frac{4}{273} = \frac{1.5 \cdot V_2}{373}$$

$$1492 = 409.5 \cdot V_2$$

$$V_2 = 3.64 \text{ l}$$

$$18.-) \quad P_1 = 3.8 \text{ atm}$$

$$T_1 = 7^\circ\text{C} = 280 \text{ K}$$

$$V_1 = 10 \text{ cm}^3 = 0.010 \text{ l}$$

$$V_2 = ?$$

$$P_2 = 722 \text{ mmHg} = 0.95 \text{ atm}$$

$$T_2 = 18^\circ\text{C} = 291 \text{ K}$$

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2}$$

$$\frac{3.8 \cdot 0.010}{280} = \frac{0.95 \cdot V_2}{291}$$

$$11.058 = 266 V_2$$

$$[V_2 = 0.042 \text{ l.}]$$